

ABSTRACT

Background

Inhaled corticosteroids forms the cornerstone of asthma therapy. With increasing incidence of childhood asthma, safety profile of ICS in children remains a subject of concern for pediatricians. This study aims to assess the alterations in glycaemic and lipid profile parameters in asthmatic children on inhaled Budesonide compared to children on as and when needed salbutamol alone.

Methods

This case control study was conducted between December 2016 and September 2017 in the Pediatric OPD and asthma clinic of Institute of social pediatrics, Stanley medical college.

79 asthmatic children (case group) on inhaled Budesonide for a minimum of 6 months in addition to as and when needed salbutamol and 40 asthmatic children on inhaled salbutamol as and when needed alone (control group) were included in the study. 4ml of blood in fasting state was drawn from both the groups for FBS, HbA1C, and fasting lipid profile. Alterations in glycaemic and lipid profile were analyzed in both the groups. The alterations were also analyzed among the cases with respect to dosage of inhaled Budesonide, duration of Budesonide use and symptom control of asthma.

Results

None of the children had glycaemic and lipid parameters in diabetic/dyslipidemia range. However the risk of having a borderline high LDL-C was 6 times higher (OR 6.410 CI 0.239-171.727) and the risk of having borderline low HDL-C was 3 times higher (OR 3.635 CI 0.951-13.891) among asthmatic children in the Budesonide group as compared to the salbutamol group.

Among asthmatic children on inhaled Budesonide lower values of HDL-C was observed in children with uncontrolled asthma as compared to partly and well controlled asthma ($p=0.002$) and also with children on higher doses of Budesonide as compared to medium and low dosages of Budesonide. ($p=0.0005$).

Conclusion

Pediatricians must carefully monitor metabolic parameters especially HDL-C, LDL-C and serum triglyceride levels in asthmatic children on inhaled Budesonide, especially in children on high dosages and those with uncontrolled asthma.

Further trials with other ICS, larger sample size, longer duration of use of ICS is required to assess the alterations in metabolic parameters and planning follow up of children when started on ICS.

Keywords: inhaled corticosteroids, asthma, glycaemic profile, lipid profile.